What is claimed is:

1.   A method for measuring inductance, said method being suitable for use in an oscillosocope, said method comprising the steps of:

5   processing current and voltage waveform data associated with an inductive device to determine edge and slope parameters for each of a plurality of current waveform data cycles;

          determining proportional magnetic flux and proportional magnetic current from said acquired current waveform data and said voltage waveform data

10   proximate determined edge regions of said waveform data; and

          calculating an inductance value of said inductive device from said proportional magnetic flux and proportional magnetic current.

2.   The method of claim 1, wherein said processing step comprises:

15   acquiring said current and voltage sample streams associated with said inductive device;

          rasterizing said acquired sample streams to provide respective waveform data; and

          storing a record of cycles associated with said current and voltage

20   waveform data.

3.   The method of claim 2, further comprising the steps of:

          identifying low peaks formed between adjacent edges of said current waveform data; and

25   defining each cycle of said current waveform data between said low peaks formed between adjacent edges.

4.   The method of claim 3, where in said step of calculating said inductance value comprises the steps of:

30   calculating start and end data points of each complete current waveform data cycle in the record; and

          calculating an average cycle of said current waveform data for all data points in said record of said current waveform data.

7330US1   P.E. Ramesh

5.   The method of claim 4, further comprising the step of:

calculating an integral of voltage waveform data from said acquired waveform data.

5

6.   The method of claim 5, further comprising the step of:

displaying imagery representing said proportional magnetic flux and proportional magnetic current associated with said average current waveform data and said integral of voltage waveform data as a proportional B and H

10   curve.

7.   The method of claim 6, further comprising the step of:

determining a slope of said proportional B and H curve.

15   8.   The method of claim 7, further comprising the step of:

computing a regression algorithm of said slope of said proportional B and H curve to obtain said inductance value of said inductive device.

9.   The method of claim 2, wherein said step of acquiring said current and

20   voltage sample streams comprises the step of:

acquiring voltage and current waveform data via respective acquisition channels of a signal processing device.

10.   The method of claim 9, wherein said signal processing device comprises

25   one of a digital storage oscilloscope (DSO) and a data acquisition module in communication with a computing device.

11.   Apparatus for measuring inductance, comprising:

means for processing current and voltage waveform data associated

30   with an inductive device to determine edge and slope parameters for each of a plurality of current waveform data cycles;

17

means for determining proportional magnetic flux and proportional magnetic current from said acquired current waveform data and said voltage waveform data proximate determined edge regions of said waveform data; and

means for calculating an inductance value of said inductive device from

5   said proportional magnetic flux and proportional magnetic current.

12.   The apparatus of claim 11, wherein said means for processing comprises:

means for acquiring said current and voltage sample streams associated

10   with said inductive device;

means for rasterizing said acquired sample streams to provide respective waveform data; and

means for storing a record of cycles associated with said current and voltage waveform data.

15

13.   The apparatus of claim 12, further comprising:

means for identifying low peaks formed between adjacent edges of said current waveform data; and

means for defining each cycle of said current waveform data between

20   said low peaks formed between adjacent edges.

14.   The apparatus of claim 13, where in said means for calculating said inductance value comprises:

means for calculating start and end data points of each complete current

25   waveform data cycle in the record; and

means for calculating an average cycle of said current waveform data for all data points in said record of said current waveform data.

15.   The apparatus of claim 14, further comprising:

30   means for calculating an integral of voltage waveform data from said acquired waveform data.

16.   The apparatus of claim 15, further comprising:

18

means for displaying imagery representing said proportional magnetic flux and proportional magnetic current associated with said average current waveform data and said integral of voltage waveform data as a proportional B and H curve.

17. The apparatus of claim 16, further comprising:

means for determining a slope of said proportional B and H curve.

18. The apparatus of claim 17, further comprising:

means for computing a regression algorithm of said slope of said proportional B and H curve to obtain said inductance value of said inductive device.

19. The apparatus of claim 12, wherein said acquiring said current and voltage sample streams comprises:

means for acquiring voltage and current waveform data via respective acquisition channels of a signal processing device.

20. The apparatus of claim 19, wherein said signal processing device comprises one of a digital storage oscilloscope (DSO) and a data acquisition module in communication with a computing device.

19